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1616

THE UNITED STATES PATENT AND TRADEMARK OFFICE
Re: Appeal to the Board of Appeals

In re Application of

)
BRATZ et al.

)
Serial No. 10/043,241

)
Filed: January 14, 2002

)
Art Unit: 1616

)
Examiner: Qazi

)
For: SOLID MIXTURES BASED ON SULFONYLUREAS AND ADJUVANTS

To: Hon. Commissioner of Patents and Trademarks

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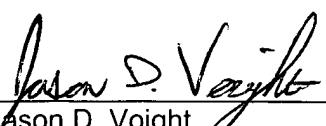
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Date of Signature

1. **NOTICE OF APPEAL:** Applicant hereby appeals to the Board of Appeals from the decision dated 4/18/03 of the Primary Examiner finally rejecting claims 10-18.
2. A check in the amount of \$110.00 is attached to cover the required extension of time fee.
3. **BRIEF** on appeal in this application is transmitted herewith.
4. An Oral Hearing is requested.
 The Oral Hearing fee of \$280.00 is enclosed.
5. Fee \$320.00
 Enclosed
6. The Commissioner is hereby authorized to charge any fees which may be further required, or credit any over payment to Account No. 11-0345. A duplicate copy of this sheet is attached.

Respectfully submitted,
KEIL & WEINKAUF

By


Jason D. Voight

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Honorable Comm'r. of Patents
PO Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

Sir:

This appeal is from the examiner's Final Rejection of April 18, 2003.

REAL PARTY IN INTEREST

The real party in interest is BASF Aktiengesellschaft of Ludwigshafen, Germany.

RELATED APPEALS AND INTERFERENCES

To the best of the undersigned's knowledge, there are no related appeals or interferences within the meaning of 37 CFR 1.192(c).

STATUS OF CLAIMS

Claims 10-18 are before the Board. A copy of these claims is appended hereto.

12/04/2003 AWONDAF1 00000015 110345 10043241

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STATUS OF AMENDMENTS

Applicants last amended the claims on January 14, 2002. No amendments under 37 CFR 1.116 have been filed.

SUMMARY OF INVENTION

As set out in the claims, the instant invention relates to a solid mixture comprising a sulfonylurea herbicide and an alkyl polyglycoside.

Sulfonylureas (hereinafter "SUs") are a group of herbicides used in crop protection. Since SUs are taken up through the leaves, SU activity can be improved by adding surfactants such as wetting agents. In agricultural practice, such wetting agents are added as mix additives to a spray liquor just prior to use. However, ready-to-use solid formulations that already contain an activity-increasing wetting agent would be desirable. It would also be desirable to maximize the stability (i.e. minimize the tendency to decompose) of the SUs in such formulations. The inventors have found, surprisingly, that the use of alkyl polyglycosides as wetting agents in SU solid formulations results in a pronounced stabilization of the active ingredient in comparison to other wetting agents.

ISSUE

Is the subject matter of claims 10-18 unpatentable over, within the meaning of 35 U.S.C. and 103, De Beer (South Africa 1989-3661) in combination with Garst et al. (WO 95/28410)?

It is noted that the claims also stand rejected under 35 U.S.C. 101 as claiming the same invention as U.S. 6,482,772. However, applicants intend to disclaim all

claims of that commonly owned patent upon allowance of the present application over the cited art. Thus, this rejection is not an issue which is before the Board.

GROUPING OF CLAIMS

Claim 10 is an independent claim. Claims 11-18 depend from claim 10.

ARGUMENT

Applicants/appellants submit that the instant invention is not rendered obvious by De Beer (South Africa 1989-3661) in view of Garst et al. (WO 95/28410).

Consideration and determination of obviousness under 35 U.S.C. 103, involves four factual inquiries: (1) determining the scope and contents of the prior art; (2) ascertaining the differences between the prior art and the claims in issue; (3) resolving the level of ordinary skill in the pertinent art; and (4) evaluating evidence of secondary considerations. MPEP 2141. “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” MPEP 2143.01. “Objective evidence or secondary considerations such as unexpected results...are relevant to the issue of obviousness and must be considered in every case in which they are present.” MPEP 2141. “Usually, a showing of unexpected results is sufficient to overcome a *prima facie* case of obviousness.” MPEP 2144.08(II)(B).

It was an objective of the present invention to provide a solid sulfonylurea (hereinafter “SU”) formulation that is less subject to decomposition. Applicants have discovered that this objective is achieved by the use of an alkylpolyglycoside as adjuvant. De Beer does not disclose solid formulations (see page 3, second and third

paragraphs). Neither of the cited references addresses the problem of SU decomposition in solid formulations comprising a surfactant. Therefore, a person having ordinary skill in the art would not have been motivated to combine these reference teachings because the references do not disclose the desirability of adding an alkyl polyglycoside to SU solid formulations to solve the problem of decomposition of active ingredient.

In any event, the unexpected results of the present invention rebut any *prima facie* case of obviousness. The beneficial effects of the alkyl polyglycosides on the stability of SU are supported by the results of Table 3 of the specification, wherein the relative level of active SU after 14 days at 54°C is given for several formulations. As can be seen, the formulations (not according to the invention) which contain either fatty alcohol ethoxylate, ethoxylated fatty amine or E.O./PO block copolymer as an adjuvant suffer a relatively drastic loss of activity after 14 days. Loss of activity is much smaller for the compositions 1 to 18 (according to the invention) which contain alkyl polyglycosides as adjuvants.

Applicants bring particular attention to Examples 15 and 16 and Comparative Example 4. In each of those examples the level of active compound is the same 7.3% before storage. In Examples 15 and 16, an alkylpolyglycoside is mixed with the sulfonylurea. As is shown in the second column from the right in Table 3, in Examples 15 and 16 and Comparative Example 4, the level of active sulfonylurea after 14 days storage at 54°C is reduced to 62%, 70% and 48%, respectively, of the initial level before storage. Thus, use of the present invention increased the relative level of active

compound after 14 days of storage from 48% for the comparative example, to 62% or 70% for the examples according to the invention. Such results were unexpected and overcome the rejection over De Beer and Garst et al. The Examiner's argument that the units of measurement in Table 3 are not the same is not understood. All of the data being compared in the second column from the right are percentages of active SU **relative** to the initial level.

Additionally, applicants note comparative examples C1 and C2, wherein the level of active compound in percent at the beginning is much lower than the amount of SU which is employed in the formulation. The amount of SU in example 1 and comparative example 1 should be about 5% by weight. However, when analyzed, the level of active compound was found to be much lower, i.e., 3.2% to 3.9%. These levels indicate that some of the SU has decomposed during the preparation of the formulation. On the other hand, the level of active compound in example 1 corresponds to the amount of SU employed in the formulation, indicating that no decomposition has taken place. This beneficial effect could not have been foreseen in light of the prior art since De Beer and Garst et al. do not address the problem of SU decomposition in a solid formulation.

To the extent the Examiner might argue that the showing of unexpected results is not commensurate with the scope of the claims, applicants note that every SU contains a structural unit as shown at page 3, lines 15 to 20 of the specification. This structural unit is prone to undergo hydrolysis even when formulated as a solid. The data in Table 3 reflect the instability due to hydrolysis. The present inventors have found that hydrolysis can be suppressed and thus the stability increased by formulating

SUs together with alkyl polyglycosides. Since the increase in stability can be attributed to the suppressed hydrolysis of the sulfonyl-urea structural unit, the results for methsulfuron methyl shown in Table 3 can be generalized to any sulfonyl urea compound.

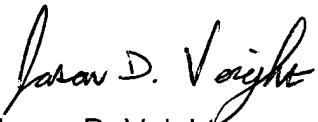
Thus, the present invention is patentable over the cited art an the Examiner should be reversed.

A check is enclosed to cover the \$110.00 one month extension fee.

Please charge any other shortage in fees due in connection with the filing of this paper to Deposit Account No. 11-0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

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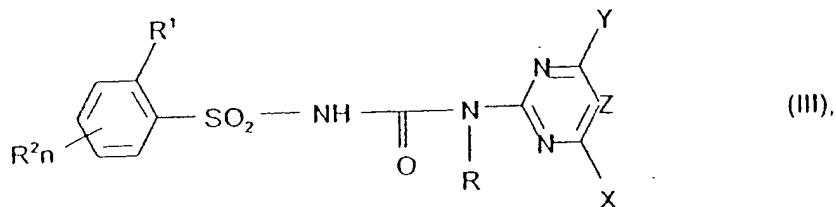
APPENDIX

Claims 1-9 (canceled).

10. (previously added) A solid mixture comprising

- a) a sulfonylurea herbicide, and
- b) an alkylpolyglycoside.

11. (previously added) The solid mixture as claimed in claim 10, comprising a sulfonylurea of formula III



where:

R¹ is

C₁-C₄-alkyl, which may carry from one to five of the following groups:

methoxy, ethoxy, SO₂CH₃, cyano, chlorine, fluorine, SCH₃, and S(O)CH₃,

halogen,

a group ER¹⁹ in which E is O, S or NR²⁰,

COOR¹²,

NO₂,

S(O)_nR¹⁷, SO₂NR¹⁵R¹⁶ or CONR¹³R¹⁴;

R² is hydrogen, methyl, halogen, methoxy, nitro, cyano, trifluoromethyl,

trifluoromethoxy, difluoromethoxy or methylthio;

Y is F, CF₃, CF₂Cl, CF₂H, OCF₃, OCF₂Cl, C₁-C₄-alkyl or C₁-C₄-alkoxy;

X is C₁-C₂-alkoxy, C₁-C₂-alkyl, C₁-C₂-alkylthio, C₁-C₂-alkylamino,

di-C₁-C₂-alkylamino, halogen, C₁-C₂-haloalkyl, C₁-C₂-haloalkoxy;

R is hydrogen or methyl;

R¹⁹ is C₁-C₄-alkyl, C₂-C₄-alkenyl, C₂-C₄-alkynyl or C₃-C₆-cycloalkyl, each of which may carry from 1 to 5 halogen atoms. Furthermore, in the case that

E is O or NR²⁰, R¹⁹ is also methylsulfonyl, ethylsulfonyl, trifluoromethylsulfonyl, allylsulfonyl, propargylsulfonyl or dimethylsulfamoyl;

R²⁰ is hydrogen, methyl or ethyl;

R¹² is a C₁-C₄-alkyl group which may carry up to three of the following radicals: halogen, C₁-C₄-alkoxy, allyl or propargyl;

R¹⁷ is a C₁-C₄-alkyl group which may carry from one to three of the following radicals: halogen, C₁-C₄-alkoxy, allyl or propargyl;

R¹⁵ is hydrogen, a C₁-C₂-alkoxy group or a C₁-C₄-alkyl group;

R¹⁶ is hydrogen or a C₁-C₄-alkyl group;

R¹³ is H, C₁-C₄-alkyl, or C₁-C₄-alkoxy;

R¹⁴ is C₁-C₄-alkyl;

n is 1 - 2; and

Z is N or CH.

12. (previously added) The solid mixture as claimed in claim 10, comprising a further herbicidally active compound c).
13. (previously added) The solid mixture as claimed in claim 10, comprising from 0.5 to 75% by weight of the component a).
14. (previously added) The solid mixture as claimed in claim 10, comprising from 1 to 50% by weight of the component b).
15. (previously added) The solid mixture as claimed in claim 10, comprising an alkylpolyglycoside having a degree of polymerization of 1-3.
16. (previously added) The solid mixture as claimed in claim 15, comprising an alkylpolyglycoside having a degree of polymerization of 1-2.
17. (previously added) A method of controlling undesirable plant growth, which comprises treating the plants and/or the area to be kept free of the plants with a herbicidal amount of a solid mixture as claimed in claim 10.
18. (previously added) A process for preparing herbicide formulations, which comprises mixing a sulfonylurea with an alkylpolyglycoside.